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CLAIMS

1. SP-C analogues having general formula (I), according to one-letter amino acid code:

5 $F_e G_f P Z Z P V H L K R (X_a B) (X_b B)_n (X_c B)_m X_d G A L L M G L$ (I)

wherein:

X is an amino acid selected from the group consisting of I, L, Nle (norleucine);

10 B is an amino acid selected from the group consisting of K, W, F, Y, Ornithine;

Z is S and can be optionally linked via ester or thio-ester bonds with acyl group containing 12-22 carbon atoms.

a is an integer from 1 to 19;

b is an integer from 1 to 19;

15 c is an integer from 1 to 21;

d is an integer from 0 to 20;

e is 0 or 1;

f is 0 or 1;

n is 0 or 1;

20 m is 0 or 1,

with the following conditions:

- $n + m > 0$;

- $f \geq e$;

25 - $(X_a B) (X_b B)_n (X_c B)_m X_d$ is a sequence having a maximum of 22 amino acids, preferably from 10 to 22 amino acids.

2. SP-C analogues according to claim 1, having formula (Ia):

(Ia) $F G I P S S P V H L K R X_4 B X_4 B X_4 B X G A L L M G L$

3. SP-C analogues according to claim 1, having formula (Ib):

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(Ib) FGIPSSPVHLKRX₅BX₅BX₄GALLMGL

4. SP-C analogues according to claim 1, having formula (Ic)

(Ic) FGIPSSPVHLKRX₄BX₁₁GALLMGL

5. SP-C analogues according to claim 1, having formula (Id)

(Id) FGIPSSPVHLKRX₈BX₇GALLMGL

6. SP-C analogues according to claim 1, having formula (Ie)

(Ie) FGIPSSPVHLKRX₁₁BX₄GALLMGL

7. SP-C analogues according to claims 1-6, in which Ser residues are acylated preferably with palmitoyl groups.

8. SP-C analogues according to claims 1-7, in which B is Lysine or Phenylalanine and X is Leucine, Isoleucine or Norleucine.

9. SP-C analogues according to claim 8, selected from the group consisting of:

SP-C (LKS) FGIPSSPVHLKRLILKLLLLKILLKLLGALLMGL

SP-C (LKS)₁ FGIPSSPVHLKRLILKLLLLIKLLILGALLMGLSP-C (LKS)₂ FGIPSSPVHLKRLILKLLLLLILLLILGALLMGLSP-C (LKS)₃ FGIPSSPVHLKRLILLLLLLKLILLILGALLMGLSP-C (LKS)₄ FGIPSSPVHLKRLILLLLLLLIKLLILGALLMGL

SP-C (LFS) FGIPSSPVHLKRLILFLLLLFILLFLGALLMGL

10. A synthetic surfactant comprising at least one SP-C analogue of formula (I) in admixture with lipids and phospholipids.

11. A synthetic surfactant according to claim 10, in which the mixture lipids/phospholipids comprises DPPG, PG, PA.

12. A synthetic surfactant according to claims 10-11, further comprising SP-B or an active derivative thereof or a polymyxin.

13. A synthetic surfactant according to claims 10-12, in form of solution, dispersion, suspension, dry powder.

14. Use of SP-C analogues of claims 1-7 for the preparation of a synthetic

surfactant to be used in all cases of surfactant deficiencies.

15. Use of a polymyxin, preferably polymyxin B for the preparation of an artificial surfactant according to claims 10-13, for the treatment of all cases of surfactant deficiencies or dysfunction, or of serous otitis media (glue ear).
- 5 16. Use according to claims 14 and 15, in which the surfactant deficiency is respiratory distress syndrome.

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